Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously presented) A method comprising:

receiving a first group of data blocks carrying data according to a first signal protocol and having a predetermined format from a switching fabric;

converting the first group of data blocks to a first set of two or more groups of data blocks carrying data according to a second signal protocol and having the predetermined format;

transmitting the first set of two or more groups of data blocks over the switching fabric;

receiving a second set of two or more groups of data blocks from the switching fabric;

converting the second set of two or more groups of data blocks to multiple data streams according to the second signal protocol; and

converting the multiple data streams according to the second signal protocol to a single output data stream according to the first signal protocol.

2. (Canceled)

3. (Previously presented) The method of claim 1 further comprising converting a data stream according to a first signal protocol to a first group of data blocks having the predetermined format by:

segmenting payload data from the data stream into blocks of data having a predetermined size; and

appending a header and/or tail indicating a destination for the group of data blocks.

4. (Currently Amended) The method of claim 1 wherein transmitting the first group of data blocks over the switching fabric to **[[**the**]]** a processing resource comprises routing the first group of data blocks from an ingress line card to **[[**a**]]** the processing resource over the switching fabric.

5. (Previously presented) A method comprising:

receiving a first group of data blocks carrying data according to a first signal protocol and having a predetermined format from a switching fabric;

converting the first group of data blocks to a first set of two or more groups of data blocks carrying data according to a second signal protocol and having the predetermined format;

transmitting the first set of two or more groups of data blocks over the switching fabric, wherein converting the first group of data blocks to two or more groups of data blocks having the predetermined format comprises:

converting the first group of data blocks to a data stream according to the first signal protocol on a destination processing device;

mapping multiple channels from the data stream according to the first signal protocol to individual data streams according to the second signal protocol; and

converting the individual data streams according to the second signal protocol to the two or more groups of data blocks having the predetermined format, wherein each of the two or more groups of data blocks correspond to one of the multiple channels.

6. (Previously presented) The method of claim 5 wherein converting the individual data streams according to the second signal protocol to the two or more groups of data blocks having the predetermined format comprises:

segmenting payload data from the individual data streams into blocks of data having a predetermined size; and

appending a header and/or tail indicating a destination for the two or more groups of data blocks.

7. (Original) The method of claim 1 wherein transmitting the two or more groups of data blocks over the switching fabric comprises routing the two or more groups of data blocks from a source processing resource to a destination processing resource over the switching fabric.

8. (Original) The method of claim 7 wherein the source processing resource and the destination processing resource for a selected group of data blocks comprises a single processing resource.

9. (Currently Amended) A method comprising:

receiving a first group of data blocks carrying data according to a first signal protocol and having a predetermined format from a switching fabric;

converting the first group of data blocks to a first set of two or more groups of data blocks carrying data according to a second signal protocol and having the predetermined format;

transmitting the first set of two or more groups of data blocks over the switching fabric as multiple streams;

converting a second set of two or more groups of data blocks to the second signal protocol, wherein converting the second set of two or more groups of data blocks to multiple data streams according to **[[a]]** the second signal protocol comprises:

receiving the second set of two or more groups of data blocks from the switching fabric, wherein the second set of two or more groups of data blocks comprise data from multiple data streams to be transmitted to a common egress line card; and

converting each of the two or more groups of data blocks to respective data streams according to the second signal protocol.

10. (Original) The method of claim 1 further comprising converting the output data stream according to the first signal protocol to a third group of data blocks having the predetermined format.

11. (Original) The method of claim 10 further comprising transmitting the third group of data blocks to an egress line card.

12. (Original) The method of claim 11 further comprising converting the third group of data blocks to a data stream according to the first signal protocol on the egress line card.

13. (Original) The method of claim 12 further comprising:

converting the data stream according to the first signal protocol on the egress line card to an optical signal; and

transmitting the optical signal to a remote device.

14. (Original) The method of claim 13 wherein the optical signals conform to the Synchronous Optical Network (SONET) standards.

15. (Original) The method of claim 13 wherein the optical signals conform to the Synchronous Digital Hierarchy (SDH) standards.

16. (Original) The method of claim 1 wherein the first signal protocol comprises a plesiochronous signal.

17. (Original) The method of claim 16 wherein the plesiochronous signal comprises a STS-1 data stream.

18. (Original) The method of claim 16 wherein the plesiochronous signal comprises a DS1 data stream.

19. (Previously presented) The method of claim 1 wherein the predetermined format comprises a data cell having a predetermined data payload and a header.

20. (Original) The method of claim 1 wherein the second signal protocol comprises a synchronous signal.

21. (Original) The method of claim 20 wherein the synchronous signal comprises a Virtual Tributary (VT) data stream.

22. (Original) The method of claim 21 wherein the VT data stream comprises one of a VT1.5, a VT2, a VT3 or a VT6 data stream.

23. (Previously presented) An apparatus comprising:

an ingress interface to receive an ingress group of data blocks having a predetermined format to provide a data stream according to a first protocol;

demapping circuitry coupled with the ingress interface to convert the data stream according to the first protocol to one or more data streams according to a second protocol;

a segmenter coupled with the demapping circuitry to convert the one or more data streams according to the second protocol to one or more corresponding egress groups of data blocks having the predetermined format;

an egress interface coupled with the segmenter to transmit the one or more egress groups of data blocks;

a second ingress interface to receive one or more ingress groups of data blocks having the predetermined format to provide one or more corresponding data streams according to the second protocol;

mapping circuitry coupled with the second ingress interface to convert the one or more data streams according to the second protocol to a single data stream according to the first protocol;

a second segmenter coupled with the mapping circuitry to convert the single data stream according to the first protocol to a group of data blocks having the predetermined format; and

a second egress interface coupled with the second segmenter to transmit the group of data blocks.

24. (Canceled)

25. (Previously presented) The apparatus of claim 23 wherein the first protocol comprises a plesiochronous signal.

26. (Original) The apparatus of claim 25 wherein the plesiochronous signal comprises a STS-1 data stream.

27. (Original) The apparatus of claim 25 wherein the plesiochronous signal comprises a DS1 data stream.

28. (Previously presented) The apparatus of claim 23 wherein the predetermined format comprises a data cell having a predetermined data payload and a header.

29. (Previously presented) The apparatus of claim 23 wherein the second protocol comprises a synchronous signal protocol.

30. (Original) The apparatus of claim 29 wherein the synchronous signal protocol conforms to the Synchronous Optical Network (SONET) standards.

31. (Original) The apparatus of claim 29 wherein the synchronous signal protocol conforms to the Synchronous Digital Hierarchy (SDH) standards.

32. (Original) The apparatus of claim 29 wherein the synchronous signal comprises a Virtual Tributary (VT) data stream.

33. (Original) The apparatus of claim 32 wherein the VT data stream comprises one of a VT1.5, a VT2, a VT3 or a VT6 data stream.

34. (Previously presented) An apparatus comprising:

an ingress interface to receive an ingress group of data blocks having a predetermined format to provide a data stream according to a first protocol;

demapping circuitry coupled with the ingress interface to convert the data stream according to the first protocol to one or more data streams according to a second protocol;

a segmenter coupled with the demapping circuitry to convert the one or more data streams according to the second protocol to one or more corresponding egress groups of data blocks having the predetermined format, wherein the segmenter partitions payload data from the one or more data streams according to the second protocol into corresponding blocks of data having a predetermined size and appends header and/or tail data indicating a destination for the respective groups of data blocks; and

an egress interface coupled with the segmenter to transmit the one or more egress groups of data blocks.

35. (Currently Amended) The apparatus of claim 34 [[24]] wherein the second segmenter partitions payload data from the data stream according to the first protocol into blocks of data having a predetermined size and appends header and/or tail data indicating a destination for the data blocks.

36. (Currently Amended) An apparatus comprising:

an ingress interface to receive an ingress group of data blocks having a predetermined format to provide a data stream according to a first protocol;

demapping circuitry coupled with the ingress interface to convert the data stream according to the first protocol to one or more data streams according to a second protocol;

a segmenter coupled with the demapping circuitry to convert the one or more data streams according to the second protocol to one or more corresponding egress groups of data blocks having the predetermined format;

an egress interface coupled with the segmenter to transmit the one or more egress groups of data blocks;

a switch fabric coupled with the ingress interface, the egress interface, [[the]] a second ingress interface and [[the]] a second egress interface, the switch fabric to route the data blocks having the predetermined format to selected destination devices; and

a plurality of line cards coupled with the switch fabric to transmit and receive signals to and from external sources, wherein the plurality of line cards convert received signals to groups of data blocks having the predetermined format to transmit over the

switch fabric, and further wherein the plurality of line cards receive groups of data blocks from the switch fabric and convert the received groups of data blocks to another format for transmission.

37. (Original) The apparatus of claim 36 wherein one or more of the plurality of line cards transmit and receive signals using the first protocol.

38. (Original) The apparatus of claim 36 wherein one or more of the plurality of line cards convert data streams according to the first protocol to optical signals and transmit the optical signals, and further wherein one or more of the plurality of line cards receive optical signals and convert the received optical signals to the first protocol.

39. (Currently Amended) An apparatus comprising:

means for receiving a first group of data blocks carrying data according to a first protocol and having a predetermined format from a switching fabric;

means for converting the first group of data blocks to a first set of two or more groups of data blocks carrying data according to a second protocol and having the predetermined format;

means for transmitting the first set of two or more groups of data blocks over the switching fabric;

means for receiving a second set of two or more groups of data blocks from the switching fabric;

means for converting the second set of two or more groups of data blocks to multiple data streams according to the second protocol; and

means for converting the multiple data streams according to [[a]] the second ~~signal~~ protocol to a single output data stream according to the first signal protocol.

40. (Canceled)

41. (Currently Amended) The apparatus of claim 39 further comprising means for converting the output data stream according to the first ~~signal~~ protocol to a third group of data blocks having the predetermined format.

42. (Original) The apparatus of claim 41 further comprising means for transmitting the third group of data blocks to an egress line card.

43. (Previously presented) The apparatus of claim 42 further comprising means for converting the third group of data blocks to a data stream according to the first protocol on the egress line card.

44. (Previously presented) The apparatus of claim 43 further comprising:

means for converting the data stream according to the first protocol on the egress line card to an optical signal; and

means for transmitting the optical signal to a remote device.

45. (Original) A system comprising:

an ingress interface to receive an ingress group of data blocks having a predetermined format to provide a data stream according to a first protocol;

demapping circuitry coupled with the ingress interface to convert the data stream according to the first protocol to one or more data streams according to a second protocol;

a segmenter coupled with the demapping circuitry to convert the one or more data streams according to the second protocol to one or more corresponding egress groups of data blocks having the predetermined format;

an egress interface coupled with the segmenter to transmit the one or more egress groups of data blocks;

a second ingress interface to receive one or more ingress groups of data blocks having the predetermine format to provide one or more corresponding data streams according to the second protocol;

mapping circuitry coupled with the second ingress interface to convert the one or more data streams according to the second protocol to a single data stream according to the first protocol;

a second segmenter coupled with the mapping circuitry to convert the single data stream according to the first protocol to a group of data blocks having the predetermined format;

a second egress interface coupled with the second segmenter to transmit the group of data blocks;

a switch fabric coupled with the ingress interface, the egress interface, the second ingress interface and the second egress interface, the switch fabric to route the data blocks having the predetermined format to selected destination devices;

a plurality of line cards coupled with the switch fabric to transmit and receive signals to and from external sources, wherein the plurality of line cards convert received signals to groups of data blocks having the predetermined format to transmit over the switch fabric, and further wherein the plurality of line cards receive groups of data blocks from the switch fabric and convert the received groups of data blocks to another format for transmission.

46. (Original) The system of claim 45 further comprising an optical fiber coupled with one of the plurality of line cards.

47. (Previously presented) The system of claim 45 wherein the first ~~signal~~ protocol comprises a plesiochronous signal.

48. (Original) The system of claim 47 wherein the plesiochronous signal comprises a STS-1 data stream.

49. (Original) The system of claim 47 wherein the plesiochronous signal comprises a DS1 data stream.

50. (Previously presented) The apparatus of claim 45 wherein the second protocol comprises a synchronous signal protocol.

51. (Original) The apparatus of claim 50 wherein the synchronous signal protocol conforms to the Synchronous Optical Network (SONET) standards.

52. (Original) The apparatus of claim 50 wherein the synchronous signal protocol conforms to the Synchronous Digital Hierarchy (SDH) standards.

53. (Original) The apparatus of claim 50 wherein the synchronous signal comprises a Virtual Tributary (VT) data stream.

54. (Original) The apparatus of claim 53 wherein the VT data stream comprises one of a VT1.5, a VT2, a VT3 or a VT6 data stream.